15621 SE 26th Street
Bellevue, WA 98008
May 26, 2000

Dear Friends:

Classics of Communication. I recently acquired Fons Vanden Berghen's book *Classics of Communication*. This book is indeed a classic, and is a valuable addition to any library. *Classics of Communication* describes the birth and growth of telegraphy in Europe. There are some 240 excellent pictures in it, most of landline telegraphs and related items from Fons' collection. These include Needle Telegraphs, Dial Telegraphs, Morse embossers and inkwriters, printing telegraphs like Baudot and Hughes, Undulators, Double Plate Sounders, etc. Some of the photo's are on Greg Raven's website at http://www.faradic.net/~gsraven/fons_images/fons_museum.html

The price is $30, including postage. Fons requests that you send cash (no checks) in an envelope (he has never had problems with this procedure) to :

Fons Vanden Berghen
Lenniksesteenweg, 462/22
B-1500 Halle Belgium

Dow-Key Project. The Dow-Key project is going great guns. I have located Lorraine Dow, Paul Dow's daughter, and she is helping me write a history of the company. This will be published in a future issue of the Keyletter. As part of the project I am taking a census of Dow-Key bugs. If you have one, I would appreciate full information about it. I need a general description of the bug, the damper, binding posts, label information, size of base, serial number, and finish. If you have internet access you can go to my web page at http://www.qsl.net/n7cfo/index.htm and complete an on-line questionnaire that will give me all of the information that I need. So far I have 51 bugs in the list, and I need about 150 more to make meaningful projections of production quantities and serial number ranges.

Buzza. I just re-read all of the Buzza material that you have in the Keyletter. I recently acquired a Buzza double lever, and it seems to have been established that Buzza used a black finger piece, and red thumb piece as original equipment. This bug follows that pattern. ***Don Korvonan.***

Western Electric Nomenclature. WECo relay 23A is the test relay used in the complete 3A Athearn repeater set used by AT&T. One was used in each side. It is very similar to the 22A except that the switch is arranged to short out the 100 ohm coils, removing that resistance from the line. The switch pivots on the terminal next toward the armature, rather than the middle one as with the 22A. The test relay contacts are connected to a three point switch WE11A which in turn connects a 24V battery circuit to a single WECo 3B sounder, permitting monitoring either side of the repeater, or neither as desired. The 21B relay is identical to the 21A except that the contacts are on the back side. These are more often than not modified A's, and some are equipped with a brass guard over the spring. The 21B was used primarily in selector systems. There's a 24D relay which is physically identical to the 24A, but the coils are brought out separately to a terminal block underneath permitting them to be arranged for 100 or 400 ohm operation, as with the WU 1B sounders. I believe the "D" was made for WU, although mine are not marked as such. Both 26A and 27A relays are pole changers used in the AC Selector system, replaced later on by 60A and 61A in more "modern" equipment.

As far as I know that is the extent of the 20 type relay series, which of course is not to say there are not others. The 30A is an entirely different animal, both functionally and mechanically, obviously. It is probably the first of a new series. The 31A is identical except that the contact switch has been omitted. That's as far as I can go in that direction. The first, unit, series encompassed the Athearn repeaters, and possible others but at least from the 1A to the 3A. I know of no other apparatus in the rest of this series, nor the second series 10 to 19. I don't know if there was a relay designated as "20". Sounders and other apparatus were coded with a 5-digit number such as 12519 for a 20 ohm sounder before this form of coding was dropped in favor of say, 3B later in the century. As we know the 15b sounder did not appear on the scene until 1917. ***Ace Holman.***

Standard Radio Bugs. In reviewing Doug Seneker's bug compendium, he describes several versions of "Standard Radio" bugs including several different base finishes. I have now had the unique opportunity to compare two of these scarce bugs side by side and can add some additional details and comparisons between them as follows:

Bug #1

- Non-beveled base
- No ID label as made
- Tall pendulum pivot support
- Thin damper
- 8-32 hardware including all the important adjustment screws
- Non-beveled smaller nickeled base to the dot and dash contact posts
- Tall dot and dash contact posts
- Non-slotted dot and dash posts
- Bent-lug style pendulum like on later model Vibroplex bugs
- Knurled finger nuts for the binding posts

Bug #2

- Beveled base
- ID label reads: "STANDARD RADIO CO. NEW YORK U.S.A. SERIAL NO. 2017 MODEL NO. (blank)
- Shorter and less massive pendulum pivot support. Clearly a totally different casting from bug #1 (above)
- Fat damper. Clearly much heftier casting than #1 (above). Way different casting but same size wheel.
- 10-32 hardware. Not just threaded differently but more massive including the screw heads. The only 8-32 threaded hardware is for the binding post nuts.
- Short, fat stubby dot and dash contact posts, with slotted tops, and larger, integral beveled base washers.
- Early pinned lever Vibroplex-style pendulum design (TVC #3 p. 10)
- Off the shelf non-knurled hex nuts on the binding posts.

COMMENT: This is a most interesting design evolution. Why they had different castings is unknown by me. I assume bug #2 is earlier, with the extra work going into the beveled hardware on the dot and dash posts, the heavier hardware, the presence of a label (an added expense), and the earlier Vibroplex style pendulum. Since the pendulum weight on #1 was probably a replacement, I can't comment on the constancy of that design feature. The weight on #2 was a generic heavy (large) Vibroplex style pendulum weight. I know nothing about the company except what a radio collector friend told me: They were supposedly the "Radio Shacks" of metropolitan NYC of the 1930's, with numerous franchises in the area. I don't know when they went out of business. ***Dave Pennes.***

A BIT OF COST ACCOUNTING. Some time back I heard that Vibroplex was making some rectangular weights available at some incredibly high cost, and decided to pass. I have come into a number of flat-pendulum Vibroplex bugs over the years missing the rectangular "lightning" style weight and set screw.

I recently purchased some brass stock, and had a machinist make me some weights. I also purchased some off-the-shelf setscrews which were slightly different from the original setscrews, being slightly smaller. (Setscrews identical in size but with a different knurling pattern from the original could be made by modifying a pre-existing 10-32 item to an 8-32 item, or setscrews could be made from scratch using brass bar stock, individually, at a cost of about $10 each, a cost I considered prohibitive). Here's how my costs worked out:

- Brass stock, 1/2"square: with shipping for a 12" piece: about $12
- Machinist: 11 weights for $40 (all you could get from the piece of brass I supplied him with).
- Brass set screws: 25 pieces including shipping $7.00; so the 11 pieces cost, $3
- Plating 11 weights and set screws: (approx.) $22

Total Cost for 11 weights? $77, or $7 each. Please note that this is with setscrews that are close to the originals but not exact. Perfectly matching setscrews would add about $110 to the above total or about $17 each weight. The biggest cost isn't even included - my time:

1) I had to order the brass stock
2) Dismantle a bug to get the dimensions of the weight
3) Drive to the machinists place. Twice. Once for delivery and once for pickup.
4) Order the setscrews from McMaster-Carr, which means poring through bunches of catalogues until I found the closest thing.
5) Everything, and I mean EVERYTHING needed surface preparation, first with coarse sandpaper to remove the deepest machining lines, then with finer grit sandpaper to remove the fine lines, and finally with rouge to get a mirror surface. This was particularly burdensome for the setscrews which were cast, and had deep casting marks on the head which were a bear to get out. (Remember each weight had 6 faces, and I ignored the bottom which still left 5 faces to dress up)
6) Drive to the plater. Twice. The plater I use is in a seedy part of town that's far from where I live and open inconvenient hours for working folk.
7) After plating, everything needs to get cleaned up with a toothbrush and soap to remove residues from the threads.
8) Most of the threads need to get chased with taps and dies since there's a slight dimensional change with plating that makes mating difficult.

Total amount of time involved in making 11 lousy weights, with driving, metal dressing and all: more than one hour PER PIECE, easy. I don't know what Vibroplex was charging for their weights, but it was worth it. Never again, (or at least soon). ***Dave Pennes.***

CORD, SENDING MACHINE, and old memories. The double conductor patch cords and the wye cord were things I had seen in use (and which I have hanging in my house) on my visits to the big double conductor switchboard at Albany, N.Y. That thing must have been at least 25 feet wide (or long) and it had many interesting features. On the key shelf in front of the panel there were keys, relays, sounders, and a Wheatstone bridge for wire testing. At 8:00 a.m. "Short Cord" Klein would come to work and survey the panel. Wherever he found a patch cord that was longer than was required to connect two jacks, he would replace it with a shorter one. The Wire Chief's desk stood at the right-hand end of the panel facing along the panel so that he could observe all his assistants at work. When I faced the panel, behind me were row after row of repeaters of various types. Most had keys, sounders and milliammeters for use of the attendants in testing and regulating them. Still farther from the switchboard were the last few Morse operating positions and the routing desk. Beyond them were the keyboard perforators, transmitters and printers of the multiplex circuits.

There were also some simplex printers (teletypewriters) for use on regional lines and tie lines. Finally, against the wall were the multiplex sets themselves with their motor driven commutators, tuning forks and control and synchronizing relays. Each multiplex set also had a switch that permitted it to be temporarily converted to Morse operation for setting up and T&R. Each multiplex unit was equipped with a Morse key and a sounder in a swinging arm resonator. These units were wired to a local section of the main testboard from which they were patched to the duplex terminal sets. The line side of the terminal sets went to the Main Line portion of the main testboard whence they were patched to the lines themselves. Thus, if a line failed, the duplex set could be patched to a different one. If a duplex terminal set failed, it could be cut out and another one patched in between the line and the multiplex set.

About 1949 they started replacing the muxes and associated terminal sets and physical lines with carrier current terminals and voice frequency channels derived from their own circuits or leased from AT&T. The microwave radio relay towers and apparatus also came into use. The voice frequency carrier terminals allowed for full duplex operation of 20 telegraph (usually printer) channels over a single voice-frequency channel. Each of the 20 modems in a carrier terminal had a pair of jacks for the insertion of the plugs attached to a small key and sounder set for testing regulating. Once when I was visiting the switchboard, a problem arose and the testboardman asked me to stand at the carrier terminal and work the key as he told me what to make from several feet away at the testboard itself. Big thrill for a teen ager to be assisting in such a (then) high tech operation.

On another occasion, I got to hear an actual Morse play-by-play news transmission of a baseball game. I think the minor league team from Albany was playing its opponent at Binghamton, N. Y. I had heard and read of how radio stations used to get the basis of their simulated "live" play-by-play description of the game. I'm glad I got to hear one of those news transmissions actually happening.

Of a somewhat similar nature were the descriptions of horse races that were distributed by Western Union on lines leased to the Continental Press. The whole operation was only marginally legal and Senator Kefauver was investigating the whole off-track betting scene. In Troy, N.Y., there was an office called Maloney's where Morse and ticker keyboard operators were employed. The Morning Line, the scratches and the running descriptions of the races came in on the Morse circuit. One Morse operator copied the stuff on a large sheet of paper from which it could be read into a telephone transmitter by another employee for transmission to nearby horse rooms. For those that could not obtain or afford voice reports, there was the ticker system. A combination operator read the report from the sounder and copied it on the ticker keyboard for transmission by wire to other horse rooms.

Maloney also published a little daily paper called the Empire State News giving racing information. Maloney's operators were considered the best in the area. No wire was hotter than the Continental Press wire. One of them was Adam Good, a damn' good man! He sometimes worked extra or relief at the Union Station in Troy. His son Adam junior worked for the New York Central. Adam once took me to Maloney's. We went up the alley to a back door of a building. Up near the top of a door frame was a rather obscure push button. Adam pushed it and look up toward a second floor window where there was a busy-body mirror set to give a view of the doorway area from inside the office. Apparently someone recognized Adam because an electric lock on the door buzzed, and we went in. The office was on the second floor. It was the most neatly and comfortably equipped telegraph office I had ever seen. I guess Maloney's smoke shop (on the ground floor in front of the building) was profitable enough that he could indulge in providing some luxuries.

I believe there was another such establishment in Gloversville, NY. Because of something about the way the telegrapher there operated his bug, they referred to it as G-four (G4) office. Boy! The memories sure do come pouring in at times. ***Richard S. Loveland***

Copy Vs. Read. I may be the only ham who does so, but I am one who distinguishes between reading and copying. I have read that some hams never learn to read without copying. On the railroad much--and at the test board or at a repeater table almost all--communication was of an informal conversational sort. I guess another word is colloquial. There were plenty of abbreviations--that Bill Gerlach used to call "boxcar code". It was as rare to write down such conversational communication as it would be for my auto mechanic to take down my every word while chatting about a recent football game. Of course if a mailing address, phone number, part number or something like that came up, he might write it down. Of course, messages, train orders, consists (description of what a train consisted of) were copied from the wire, as were reports involving a printed form to be filled out. A telegrapher might make a note of the time of departure of a train coming his way, and discard it after the train had passed.

I've seen operators copy with a pencil or a mill. I've seen telegrams that had been copied in ink. But I never saw or heard of anyone who COPIED by EAR. He may have read by ear, but not copied. The concept of Morse as an artificial language seemed quite common among the early telegraphers. In the Bunnell students' manual of 1884 the author writes of learning to read and write Morse. On the D&H a senior operator names Sherman Spencer (His twin brother was Sheridan Spencer so you can figure the era his their daddy came from) was speaking of another operator who used a Vibroplex with considerable abandon. Sherm said, "He never makes the letter 'and'. I doubt if he ever learned the alphabet."

Many people today apparently confuse hearing with copying. I think the phone hams, CBers and other two-way radio users in an attempt to be "salty" adopted the telegraphers' term "copy" as a substitute for "hear", "get" or "understand". If one of them asked me if I had copied something, I would be tempted to ask "Did you write anything?"

Once on 80 meters the Army's champion radioman J. Ralph Graham, W4RJX, has been sending. Someone else in the group asked if I could copy Ralph OK. I told him "No I cannot write that fast". When the hams on the traffic nets used to ask me "Hw copy?" I would answer "Pen and ink". Of course there were jobs that required a telegrapher to copy almost everything. The press, broker, or horse room operator seldom sent anything or even answered the wire. There was one sender at the main office and receivers were distributed in various cities. They were expected to be on the job and take what was sent without being called or addressed. I heard of one job where the operator didn't even know where the key was. When his boss came in one day with a question to be transmitted the telegrapher had to hunt around until he found a key mounted up on the wall. I guess they didn't want him to break.

That reminds me of Jack Burns who was working relief for the Troy Union in the early 1950s. He had formerly been with the New York Central when they had a practice of sending consists from one yard to several other stations simultaneously. The sender was not the clearest of senders and sometimes his combinations were really unreadable, and Jack would break and get the needed fills. One time when meeting face to face with some of his co-receivers he asked, "Why am I the only one who has to break?" One answered, "Why should I break? I know you will." Jack used to say that a good sender needed C-N-L and J-G-M. Phillips code “cnl es jgm” = "Control and judgement".

Wes Burnham of the New York Central told me of a former broker operator who had been let go and came to the railroad seeking work. They sent him to a signal tower to get familiar with the work. He was an utter failure because he was so habituated to the way it had been in the brokerage business that he HAD TO COPY everything that came over the wire whether it was addressed to him or not and regardless of what other things might require his immediate attention. ***Richard S. Loveland.***

Radio Operator Hiring Procedures. You could hire a seaman at the local seaman's hall, or more usually, the seaman's bar. An experienced Able Bodied Seaman, could serve as a boatswain, if need be. An engineer could be pressed into service as a fireman if he needed a job. But which seaman had the knowledge needed to operate a wireless?

Remember, being a seaman is also a occupation that requires documentation. By the time of the introduction of Wireless Telegraphy (WT) seamen of all countries carried "seaman's papers" or Merchant Marine Documents, or more usually a booklet which had entry lines to show where you worked and if your performance was satisfactory. About 5 years ago, the booklets were phased out.

It is possible to travel on your seaman's documents without a passport, it being accepted as a passport. It contains a photograph, a right thumbprint and your signature, and the signature of the issuing authority, in the case of the United States, the U.S. Coast Guard (USCG).

In the USA, the USCG is also responsible for issuing licenses, and issues them for mates, engineers, staff officers, such as purser, and physician/surgeon and nurse and for Radio Officer. The examinations for the Radio Officer's license are administered by the Federal Communications Commission, which issues internationally accepted certificates like the first and second class radiotelegraph certificates.

It wasn't until the late 40s that American seaman won the right to ship out themselves and not be hired directly by RCA Radio Marine, or Mackay Radio. In Holland, the practice still continues, as it does in many countries. Radio Holland, the large equipment manufacturer, and purchaser of what was left of the USA Radio Marine is the agent for radio officers in Holland. I worked on USA ships licensed to Radio Holland, but was employed by the steamship company directly and hired by the Radio Officer's hiring hall. ***David J. Ring, Jr.***

Western Union Terminology. AT&T/WE used numbers from 1 to 30 to refer to various kinds of telegraph apparatus. 1 to 9 or 10 for Keys, sounders and resonator hoods. 10 or 11 to 19 or 20 for switches (but Main Line Sounder 15-B snuck in somehow), 21 to 26 or so for non-polar relays, and 30/31 for polar relays. AT&T used the 24-A and 24-B transmitting relays. W.E. made the 24-C and 24-D transmitting relays especially for W.U.T.Co. Most W.U.T.Co. code numbers are one-digit because W.U.T.Co. started with 1-A for each item name. In other words, a separate series for each item name. AT&T/WE put most units of telegraph apparatus in one series. They seem to have used another series for the larger items which I will call telegraph equipment, such as Single Line Repeater 3-A, which included 2 Polechangeing locking relays 25-A along with other parts mounted on a common base. ***Richard S. Loveland***

Telegraphone. We had quite an interesting thread on the Telegraphone on the MORSECODE e-mail reflector. The following information was developed:

> There is MORE than just to use a second wire i.s.o. the earth. I refer to my book CLASSICS OF COMMUNICATION page 92 and 93:
>
> "Another important Belgian inventor was the Ghent mathematician Francois Van Rysselberghe. It wasn't long after the invention of the telephone (1876) before telegraph lines started to be used for telephone calls. This often caused problems, given the different nature of the two techniques (telegraphy uses direct current pulses and telephony alternating current with much lower power (not considering the ringing current)). Most notably, the telegraph signals interfered with the telephone calls through induction (cross-talk) when the respective lines ran along the same poles. Van Rysselberghe was particularly active in this field and proposed a variety of solutions. In 1882, he discovered a way of combating this interference through the judicious placement of coils and condensers. This provided an immense boost to the expansion of long-distance telephone traffic. His first Belgian patent dated from 20 February 1882.
>
> The first trials with Van Rysselberghe's system were held on 16 January 1882 between Brussels and Antwerp. On 17 May that same year, a further trial was held between Brussels and Paris. They proved a complete success and caused quite a stir internationally. The technique was thus quickly adopted in many countries as it allowed the same wires to be used simultaneously for telephony and telegraphy." As I am (somewhat) specialized in European telegraphy, I don't know if his system has ever been used in the U.S. ***Fons Vanden Berghen***

The following piece was printed in the November 1906 issue of ATT newsletter *Soundwaves*, and is re-printed by the permission of.

The "Other" Telegraphone--a Combination Telegraph/telephone from the Turn of the 20th Century.

> Poulsen's well-known telegraphone is widely known as the first commercial magnetic recording device. There was, however, another product called the telegraphone introduced about the same time, and also sold in the U.S. by a firm called the American Telegraphone Company. The following passages are quoted from microfilmed documents located in the AT&T Bell Laboratories archive at Warren, New Jersey.
>
> "There has been much written about the use of the telephone by railroads for assisting them in their dispatching business. This use of the telephone has already been made by several railroad companies and only reason why the telephone has not become more popular is because there have

been great drawbacks to its use in connection with the telegraph lines. There has been a considerable advance along that line recently and now portable telegraphones are on the market, by means of which it is possible to talk over several hundred miles of telegraph line without any trouble. The name telegraphone may be confused with the other instrument of the same name that was described in this magazine a short time ago, but it is entirely different and it merely means an instrument by means of which it is possible to talk over a telegraph line at the same time that message are being sent without confusion.

Such instruments have been used on the Galveston, Harrisburg, & San Antonio railway for some time, and Mr. Percy Hewett, Superintendent of the Telegraph of that company, states that they are giving good service. He writes as follows:

'We have equipped our line between San Antonio and Del Rio, with a branch from Spofford Junction to Eagle Pass. The wire on the branch is No. 8 iron. The telegraphone at Spofford is bridged between the two wires. We have equipped all of our cabooses with the instrument. For purposes of communication we use our duplex wire, which is a 210 pound copper. These instruments are giving first class service and are the means of saving serious delays in freights caught at blind sidings, or in case an inferior train reaches a meeting point with a superior train where the superior train has been for some reason delayed. After waiting a few minutes the conductor attaches his telegraphone by using a connecting pole, and calls up the dispatcher, states what train he has, and asks in regard to the train which he was instructed to meet.'" ***David Horton***

I also have heard of a similar scheme using old RR telegraph lines for poor quality voice communication. I work for the Santa Fe RR as a telecom tech and the "old" guys there tell me of a device they called the "Harmon Carrier"....not sure of the spelling on that. The scheme probably came a bit later than the "telegraphone" as they say that they employed some FDM (freq division multiplex) to get several "channels" on it. ***Jim N5KY***

Collector's Databases. After a year of key collecting I came to realize that keeping records in a school exercise book might not be the best way. I needed a database program that linked to images, could be searched on and could produce reports. Using a web search utility, I found that there were many such programs, with names such as The Collector, Collector Pro, Collectibles etc. I downloaded trial versions of each one. Most were suitable but, oh dear, nearly all had major faults - the main ones being unreliability and lack of "portability". Most of these programs locked themselves to a particular directory of a particular machine - the data could not be relocated, exported or copied. I want the database to last for years and years - not just for the lifetime of this particular PC! Again, sadly, most of these programs were horribly unreliable. One very sophisticated program would crash irrecoverably every time a field name was changed. After a crash there was no way to access the records or even your backups! So after a fortnight of burning the midnight oil, I settled on Collection Explorer from EPS Solutions, Radio Collector Software, PO Box 862, Broomall, PA. This program is written in Microsoft Access and has the look of Microsoft Explorer. The version I bought was set-up for a collection of antique radio equipment, so it was very straightforward to convert for my telegraphy and other collections. This is not the greatest program in the world, but it does appear to be bomb-proof, the data is portable, it is easy to use and the report function is very good. A few whinges are that the number of fields and field length are too restrictive, that it only allows a single link to an image and the amount of displayed text is about 10% of the available screen.

When will programmers learn that disk storage is cheap and information is valuable? I have overcome the lack of links, by assigning one field as a list of references, where I enter the file names of all supplementary images and documents. Collection Explorer trial version can be downloaded from www.collectionexplorer.com. The trial version can only be run 25 times - which is too few when you are trying to evaluate it and ensure that it is really bomb proof! However, all data and settings entered into the trial version can be copied over to the registered version without any hassle. The cost is $42. ***David Smith***

Western Union Signs. Richard Loveland provided the following information and nomenclature about Western Union Signs. This information is excerpted from *THE WESTERN UNION TELEGRAPH COMPANY INSIDE PLANT CATALOG OF APPARATUS, MATERIAL and TOOLS July 1, 1929.*

SIGNS [Commercial advertising types]

Only sufficient information as will identify the various signs is given here. See Sign Bulletin for further data. Under "Wording" is shown complete lettering , except as in parenthesis. Horizontal dimension is shown first.

Number	Type	Faces	Specn.		Size		Wording
1-B	ILLUM.	OUTRIGGER	D	....	72	x 36	W. U. (10" letters)
2-B	"	"	D	....	90	x 42	W. U. (12" letters)
3							
-B	"	"	D	....	30	x 20	w. u. (8" arrows)
NEON	"	"	D	....	30	x 64	W. U. (8" LETTERS) BORDER (SPECN. 2438)
1-C	Flanged Iron		D	116	24	x 12	W. U. T. and Co.
2-C	"	"	D	140	30	x 15	" "
3-C	Flat	"	S	230	27	x 19	" "
*5-C	"	"	S or D	232	30	x 18	" " (arrow)
9-D	Crane	"	D	122	34	x 21	W. U. oval
12-C	Flat	"	S	235	34	x 12	W. U. T. and Co.
13.	"	"	S	....	5 1/4	x 8 ½	W. U. oval
14-C	Flash glass		S	236	22	x 12	W. U. T. and Co. framed
15-C	"	"	S	237	36	x 26	" " framed
21-C	Flange Iron		D	238	f18	x 9	(Agency descr.)
22-C	"	"	D	389	18	x 9	(Money transfer)
24-c	Flat Litho	"	S	395	18	x 13	(" ")
25-C	Flat Iron	"	S	390	14 ½	x 9	(Telegrams accepted)
26-C	Cardboard	"	S	394	7	x 4	" "
27-C	Flat Iron	"	S	97	27	x 51	W. U. (grams, DL, NL)
28-C	"	"	S	391	18	x 34	" " "
29-C	"	"	S	390	27	x 51	W.U. (grams, CL, WEL)
30-C	"	"	S	393	18	x 34	" "

Printing Telegraph Systems. Printing telegraph systems WERE used successfully in the U.S. during the 19th century. A shift took place during the 1850's as to their application; from a competing technology, to a specialized one. During the 1840's, companies representing the three big patents of

Morse, Bain, and House competed with each other. In fact, at one time here in Troy, offices of companies representing these patents, were located directly next to each other.

During the 1850's, with Morse being the dominant technology, The American Telegraph Company began to use the printing telegraph on important circuits between MAJOR cities in the east and northeast US. With the invention of the Combination Printer in 1859, American Telegraph used this system for high volume, "high speed" traffic between these cities. To me, this application was the 19th century equivalent of what you would call today a high speed backbone between two important hubs. Phelps built the Combination with the intention of putting it to use on circuits of 300-500 miles in length. These printers handled hundreds of messages during an operator's shift. One of the Boston-New York circuits was dedicated to handle just commercial news. The Combination was capable of around 45 wpm on the early models, and later improved to 60 wpm. It was VERY reliable under marginal conditions. Its single current pulse output, generated by a heavy contact closure, could represent any one of its 28 characters. They were very stable and ran in sync for long periods of time. If for some reason the constantly revolving type wheels, found in each printer, were to lose sync, the receiving operator would generate a "break" and the transmitting operator would stop, start over, and re-sync.

The printer itself was powered by compressed air. With the early models, an operator would build up air pressure into a storage tank mounted beneath the printer by using a treadle. Later models were powered by electric motor. American Telegraph, and later, Western Union, used the Combination for 20 years. It was replaced in the late 70's by the Electro-Motor Telegraph, also used for the same type of service.

Yes they were expensive, large, and heavy machines, but the post House machines were never intended to replace Morse. Instead, they fulfilled the requirement of providing very fast, high volume, reliable communications on important circuits between big cities. I am impressed with the fact that a printing telegraph system of this speed and accuracy was constructed successfully during pre-civil war years with electrical parts consisting of only electro-magnets, wire, and primitive batteries. Many of the House instruments used in the U.S. were built here in Troy, and the Combination was also invented here, and so my interest. ***John Casale.***

Western Electric Manufacturing Co. marking variations:

1.	W.E. MANUF'G. CO.	(shown in a arch on one line)
	CHICAGO	(shown below by itself)

(both lines separated by a line that looks like the schematic symbol for a resistor, only longer)

2.	W.E. M'F'G. Co	(on one straight line with a small "o" in Co.)
	CHICAGO	(by itself with both lines enclosed in a rectangle with curved-in corners. I also have one with a large "O" in Co.)
3.	W. E. M'F'G. CO. NEW-YORK	

Marking #1 I have on a Lewis key and on a Lewis sounder. #2 I have on a very early pattern sounder that has individual pivot supports. I also have a cut-out with this marking. #3 I have on a Morse relay.

Western Electric Manufacturing Company was formed in 1872 with the consolidation of Gray and Barton with Western Union's Ottawa (Caton) facility. The "Manufacturing" in the name, was dropped in 1882 with American Bell's acquisition of Western Electric. Their factory in New York began operations in the spring of 1879. This dates instruments with "Manufacturing" and a New York address built between the years of 1879-1882. The markings enclosed within a rectangle appear to be the first ones used. ***John Casale.***

Flip-Top Resonator. Friends, here is what Bill Dunbar said about the flip top resonator box. Very interesting. "I believe the purpose of the design was not so much to service the sounder, but to create a dual-purpose instrument. With the hood swung back, the unit serves as a calling sounder, with a relatively low audio level. With the hood in place, amplification is had. ***Neal McEwen.***

Marconi 365 covers. Have you ever wondered why you see so many of the Marconi keys like the 365's missing the cover? Turns out there's a reason - the wireless ops took them off to use as ashtrays! ***Wyn Davies.***

MORSECODE BITS AND PIECES:

MFP. I have a Lionel J-36 that is marked on the base in white letters, "M.F.P. FEB 1953". I don't recall where, but I've been told that MFP means Moisture and Fungus Proofed. The guy I got this bug from bought it in 1970 at a surplus store, new, in a sealed box. The date of the Lionel label is 1943. It shows no evidence of wear. So I suppose this bug sat in stores somewhere until MFP'd in 1953, then sealed again. Was this common practice for gear going to Korea? Seems to me I've see non-key equipment that was MFP'd during WWII. I've only seen one other key with MFP on it and it was a similar vintage Blue Racer that I think K8MFO has now. Any bright ideas? ***Neal McEwen***

MFP. Yes, I have the 1943 Blue Racer here that was "MFP AUG 1951". I have always wondered where the key was in the 8 years between manufacture and "moisture and fungus proofing". In the WWII era there were obviously plenty of J-36 bugs coming from different manufacturers, but I have never been able to figure how this standard, wrinkle finished Blue Racer played into things! ***Don Karvonen***

MFP. From TM-11-850, Radio Receivers, September 1946. Section IX. Moistureproofing and Fungiproofing.

> 49. General
>
> a. When equipment is operated in highly humid climates, excessive failure of parts and decreased operating efficiency are usually caused by the accumulated effects of moisture, rather than by inferior parts.
>
> b. Moisture also accelerates fungus growth.
>
> 50. Reducing Failures
>
> a. A moistureproofing and fungiproofing treatment has been devised which, if properly

applied, provides a reasonable degree of protection. The treatment consists of applying a film of moisture and fungi-resistant varnish to all susceptible parts of the equipment This film provides a nonwetting surface. Equipments which have been treated have been marked with the letters MFP and the date of treatment.

b. TIG SIG 13 contains a detailed description of this treatment.

c. Retreatment may be required after a period of use.

51. Treating Radio Receivers. [Radio equipment requires some disassembly prior to application, cleaning, masking, and drying in an oven]

g. Varnishing. (1) apply three coats of moistureproofing and fungiproofing varnish (Lacquer, Fungus-resistant, Signal Corps stock no. 6G1005.3, or equal). Allow each coat to air-dry for 15 or 20 minutes before applying the next coat. ***Tom French.***

Argentine Keys. I refer to Tony's message about an ATM key he bought. Is a funny thing that several British manufacturers sold exactly the same models (keys and sounders) under their own brand. This I have seen in Silvertown catalogue No. 33 (undated) and in Siemens Bros in association with Elliott Bros catalogue dated July 1922, plus actual ATM keys in my possession. It would appears that there was only one factory selling to the others. Which one?

What is more, only recently I discovered that what I thought was an English key identical to the one Tony bought, is in fact an Argentine copy! Just for the record I have seen the ATM logo in ads as late as 1958 used by the Automatic Telephone & Electric Co. Ltd. manufacturers of 5 unit telegraph distortion measurement equipment (*Telegraphy* by J.W. Freebody, 1958 page 726)

I can also report that in Uruguay Punta Carretas Radio (CWA) still uses Morse to exchange traffic. I am being told that, of course, "traffic is not what it used to be" and Morse mainly used by "funny flag" ships. I am also informed that Pacheco Radio in Argentina and Valparaiso Radio in Chile continue using this mode of transmission. ***Gustavo Coll.***

ARTA. Neal McEwen found this advertisement in the December, 1935 of ARTA, "Official Organ of the American Radio Telegraphists Asso.," a union of radio telegraph operators.

> **READ THIS ONE FROM TED McELROY** Greeting to my fellow operators and ARTA brothers! On the back cover of ARTA you'll find an ad similar to the one that I ran in the Radio Amateur's Handbook. It cost me a good deal of dough so I hope you'll clip it out of this issue of our own magazine and save it for future reference in case any of you ever get enough dough to be able to afford a "bug". Eventually, with the strength we'll get out of affiliation with the A. F. of L., we may win further battles in our efforts to get a living wage. When that time comes I'll probably sell plenty of my MAC KEY. Meanwhile, I give you my word that the new Junior Model is a swell "bug" and allows you to enjoy MAC KEY advantages at an awful low cost. Regards from yours fraternally, MAC.

On the back cover of the rag is a full page ad for the MAC KEY and Junior. ARTA was then on strike against MacKay Marine and RCA and maybe others, so you can see why he said the things he did. McElroy and all of his brothers were members of the ARTA union. Any old timers around that were members of ARTA? ***Neal McEwen.***

McElroy Keys. I bought a 1941 copy of "The Radio Handbook" for $2 at the Scottsdale Meet - for the ads. McElroy has a two page spread one page of which is devoted to keys including the S600, P500, A400, and the Streamkey series.

Fact #1: Chrome and black cast based models came in two styles, the ball bearing balanced lever BB-200 or BB-300 and the bronze bearing screw model BS-200 or BS-300. How do you tell the difference?

Fact #2: The Amateur Stream Key as we know came in either grey or black plastic, but did you know that the A100 came "minus switch & speed key lip"? The S100 had the circuit closer of course. I always thought it had been removed off the ones I found without it. More variations! ***Tony Rogozinski.***

Hill's Vari-Speed. Since I went through the effort of conducting the Hill's Vari-Speed survey, here are the results.

W1TP	- 1 round shaft Vari-Speed
W1IMQ	- 1 round shaft, 1 flat shaft
KN6W	- 1 round shaft
N7BG	- 1 round shaft
K8MFO	- 1 round shaft, 1 flat shaft

What inspired me to do the survey was a face to face meeting last September with Frank - W8OK. I bought a round shaft Vari-Speed from him. Frank told me that he lived a block or so away from Joseph Hills - W8FYO, in the 1950s. He even helped Hills with the setup of his advertising brochure for the FYO paddle. Frank told me that Hills made only 36 of the round shaft Vari-Speeds, and that considerably more of the flat shaft devices were made. While this seems surprising to me, that is what the man said. This very unscientific survey turned up 5 round and 2 flat shaft models. ***Don Karvonen.***

J-7. The J-7 was first used on airborne spark transmitters in the WW1 period notably on the BC15. (come on over and I'll show you the complete tx setup with key(s) and matching rx). I also have some photos here on a period biplane installation of the key. The winker was essentially a visual side-tone which allowed the operator to follow his keying thru the local cockpit noise which would have blocked out the spark buzz. The J-5 is the same key without the winker. There are variations of the J-5 and J-7 mostly in markings and to some degree in style. Some of the Navy marked versions had elevated winkers for some reason. Some of the levers are a bit different. It seems the primary maker of these was L.S. Brach of Newark but other makers show up frequently too.

There are also "A" versions of these keys. They are mostly identical to the originals but were produced after WW1 up to WW2 period. Generally they are marked with contract dates which indicate this. I'm not sure what apparatus they were used on after the spark era though. If you peruse post war issues of QST you will see ads for surplus J5s and J7s selling for 50 cents to 1.50 on Chambers St.

Sometimes all brass models show up of these keys which look neat but I believe they were not originally made that way but rather have been stripped or sanded down to the natural brass. ***Pete Malvasi.***

J-7. The winker was kind of an inverse sidetone. The bulb is in parallel with the key contacts, so battery voltage to the spark coil is across the bulb at key up and zero when the key was down. ***Neal McEwen***.

Marconi Roadmap. The Marconi Roadmap key that some of you have is shown in a very early American Marconi (Marconi Wireless Telegraph Co. of America) catalog approximately 1912. The keys were probably made in the Aldene, NJ plant. "The key is small, neat, light in operation and with the knob close to the table. The base is of fireproof material [Electrose or mud as it was called by old timers because it was clay based with fibers added.] and metal parts of lacquered brass. We have designed it to provide an inexpensive desirable key for the experimenter." The 15 amp version was $5 and the 30 amp version was $5.75. ***Neal McEwen.***

Finger Tapper Keys. Morse Express announces the availability of a new single lever paddle and straight key made in California by Jim Richards, KD6VDH. Jim has been making the Finger Tappers keys for about 18 months now and the designs show a very nice level of refinement.

The straight key is a medium sized key machined from solid brass stock and mounted on a polished hardwood base with a rubber pad underneath. Connections are made by screw terminals at the back of the key, with the internal wiring concealed in the base. The base measures approximately 2 x 3-1/4 inches, and the weight is 14 Oz-- quite heavy for a device of its size. The knob is very unusual, with a brass cap and wooden base, and is surprisingly comfortable during extended sending sessions. The trunnion is mounted in full race bearings with adjusting screws.

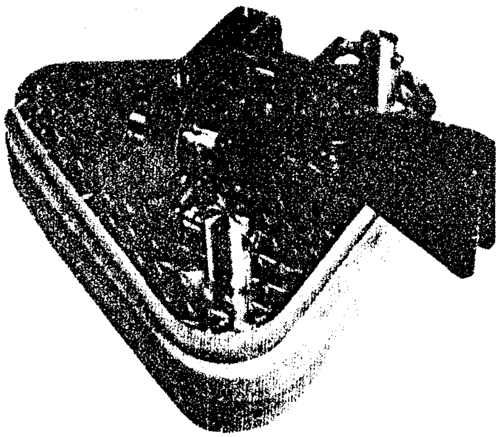
A close companion to the straight key, the Finger Tappers single lever paddle is a classic machined-brass-on-wood design, and a lot of fun to use. Similar in style and materials to the straight key, it has the same base dimensions and weight. Contact spacing can be precisely adjusted for a very light touch, and it can easily be configured as a "cootie key." There are very few single lever paddles made today, and this one is excellent value for money.

The Finger Tappers straight key and paddle are reasonably priced at $99.95 each. Pictures and more info are available on the Morse Express web site at www.MorseX.com where you will also find secure ordering facilities. Call (800)238-8205 toll free to order by phone, or (303) 752-3382 for more information.

For sale or trade: British, European and other keys for sale or trade. Send want lists by mail to Wyn at Pen-Y-Maes, Halcog, Brymbo, Wrecsam, Wales, U.K. LL11 5DQ. Wyn is now up on email at "dw.davies1@talk21.com".

Well, that is it for #31. Special thanks to Jeffrey Maass for the Hamco flyer cuts on pages 371-374 - this is the first literature that I have seen on Hamco, and the first that I have heard of the "CarsonM model. Please keep the letters and e-mails coming, and above all, if you have a Dow-Key bug, please provide me with information on it!

73



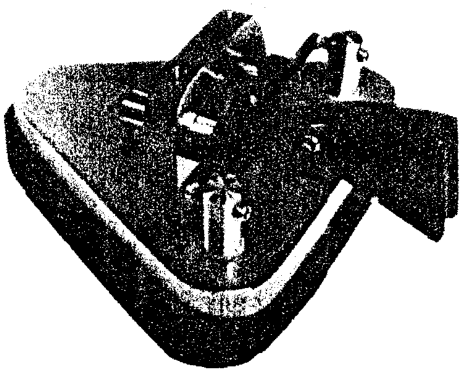
Professional In Appearance

- SOLID BRASS CONSTRUCTION
- HARDWOOD BASE
- HIGHEST QUALITY MATERIALS
- 100% AMERICAN MADE
- THREE DIFFERENT FINISHES
- EACH KEY IS HAND CRAFTED
- HEAVY CONSTRUCTION . . .

"WON'T WALK"

Professional In Performance

- INDIVIDUAL PADDLE ADJUSTMENT
- NO SPRINGS TO FLY OFF
- SOLID SILVER CONTACTS
- NON-SKID FEET
- COMPLETELY PRE-WIRED
- LIFETIME WARRANTY



"THE SCOTIA"

BEAUTIFULLY FINISHED IN
BRUSHED ANTIQUE

OUR MOST POPULAR KEY

$59.95
Plus Shipping $2.00

"THE TRINIDAD"

THE NEWEST FINISH . . .
ATTRACTIVE ENGINE-TURNED
SURFACE

GLISTENS WITH MANY
FACETS

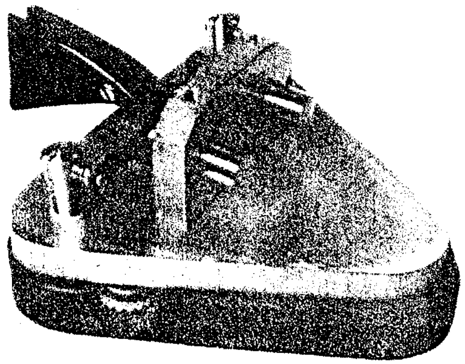
$69.95
Plus Shipping $2.00

LIFETIME WARRANTY

HAMCO warrants to the ORIGINAL PURCHASER of this product that if it should ever break or become defective, HAMCO will repair or replace it at their option.

Shipping will be paid by the owner of this product.

Warranty Card must be returned and be on file with HAMCO.



"THE CARSON EK-1"

- COMPLETELY SELF-CONTAINED ELECTRONIC KEYER & PADDLES IN ONE
- POPULAR CURTIS 8044 CHIP
- FULL 90-DAY WARRANTY
- BATTERY OPERATED WITH ABOUT 18 MONTH BATTERY LIFE
- FULLY IAMBIC WITH DOT & DASH INSERT
- ADJUSTABLE SPEED CONTROL
- WORKS ON ANY RIG, TUBE OR SOLID STATE
- ALL HAND MADE

$129.95
Plus Shipping $2.00

Order Today From:

hamco
P. O. Box 3042
Eureka, California 95501

"THE SCOTIA"

BEAUTIFULLY FINISHED IN BRUSHED ANTIQUE

OUR MOST POPULAR KEY

$54.95

"THE TRINIDAD"

THE NEWEST FINISH . . . ATTRACTIVE ENGINE-TURNED SURFACE

GLISTENS WITH MANY FACETS

$64.95

"THE CARSON"

THE ULTIMATE . . . HIGHLY POLISHED . . . SHINES LIKE A GEM

FREE ENGRAVED NAME OR CALL PLATE

$74.95

»»»HAMCO«««

The Hamco Keys are the finest keying device on the market, and are fully adjustable for optimum "feel."

The Hamco Key comes complete with wire and 1/4" stereo plug. You will need to connect the plug by soldering the ground (shield) to the ground terminal on the plug, and then the two wires to the proper terminals. The correct connections are determined by your keyer, so as to have the left paddle producing "dits", and the right one the "dahs."

The Hamco Keys are factory aligned, and will perform well with no further adjustments. You may optimize the "feel" of the key to your personal tastes by the following adjustment, using the proper tools.

*Contact travel - paddle movement

Adjust each paddle individually with the stationary contact. Turn the adjustment screw until desired spacing is obtained. (Check to see that the silver contacts are facing each other squarely.) Large variations in paddle travel are made by simply adjusting the screw that limits the paddle return. This adjustment is on the upright supporting the magnets. By making small adjustments at a time between these two variables, you can obtain the optimum paddle travel for your keying technique.

*Paddle tension

Each paddle may be separately adjusted for optimum tension. Moving the lifetime magnets causes the paddle tension to vary, as the magnetic field intensifies or decreases. Using an allen wrench, loosen the magnets and slide them nearer the paddles for more tension, further away for less. Do not set the magnets so close that the paddle arms are in contact. If the magnets are placed too far away, the key will lose its positive feel. Usually, the CW operator will find it not necessary to change this initial adjustment. Carefully Tighten the set-screws to hold the adjustment.

The paddle arm returning screws require adjustment so that there is adequate clearance for the paddle. This is usually accomplished by tightening the screws until they are just snug, then backing off one-half turn.

The Hamco Key is designed for the serious CW operator - those who put their best "fist" forward. You can increase your sending speed by using the fingertip sending method - there's a lot less mass

The Hamco Key comes complete with wire and 1/4" stereo plug. You will need to connect the plug by soldering the ground (shield) to the ground terminal on the plug, and then the two wires to the proper terminals. The correct connections are determined by your keyer, so as to have the left paddle producing "dits", and the right one the "dahs."

The Hamco Keys are factory aligned, and will perform well with no further adjustments. You may optimize the "feel" of the key to your personal tastes by the following adjustment, using the proper tools.

*Contact travel - paddle movement

Adjust each paddle individually with the stationary contact. Turn the adjustment screw until desired spacing is obtained. (Check to see that the silver contacts are facing each other squarely.) Large variations in paddle travel are made by simply adjusting the screw that limits the paddle return. This adjustment is on the upright supporting the magnets. By making small adjustments at a time between these two variables, you can obtain the optimum paddle travel for your keying technique.

*Paddle tension

Each paddle may be separately adjusted for optimum tension. Moving the lifetime magnets causes the paddle tension to vary, as the magnetic field intensifies or decreases. Using an allen wrench, loosen the magnets and slide them nearer the paddles for more tension, further away for less. Do not set the magnets so close that the paddle arms are in contact. If the magnets are placed too far away, the key will lose its positive feel. Usually, the CW operator will find it not necessary to change this initial adjustment. Carefully Tighten the set-screws to hold the adjustment.

The paddle arm returning screws require adjustment so that there is adequate clearance for the paddle. This is usually accomplished by tightening the screws until they are just snug, then backing off one-half turn.

The Hamco Key is designed for the serious CW operator - those who put their best "fist" forward. You can increase your sending speed by using the fingertip sending method - there's a lot less mass in motion if you use just your fingers, as opposed to your arm or wrist. Keep arm and body movement at a minimum - concentrate on moving the thumb and first finger only - try it!

You, the original owner, have an unlimited lifetime warranty on this Hamco product. Stated simply: If it breaks, Hamco fixes it. You must return the enclosed warranty registration card to put this guarantee in force. You are responsible only for shipping charges - coming and going. Repaired keys will be returned freight collect - usually via UPS.

HAMCO
P.O. Box 1275
WB6MYF WB6SXJ AA6DX

2806 Broadway
Eureka, CA
707-443-6455